



UNITED STATES PATENT AND TRADEMARK OFFICE

SP  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,507	12/10/2003	Fu-Yin Wang	BHT-3230-80	4644
7590	01/18/2005		EXAMINER	
TROXELL LAW OFFICE PLLC SUITE 1404 5205 LESSBURG PIKE FALLS CHURCH, VA 22041			NGUYEN, NINH H	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SN

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/731,507	WANG, FU-YIN	
<b>Examiner</b>	<b>Art Unit</b>		
Ninh H. Nguyen	3745		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s)        is/are withdrawn from consideration.
- 5) Claim(s)        is/are allowed.
- 6) Claim(s) 1 is/are rejected.
- 7) Claim(s)        is/are objected to.
- 8) Claim(s)        are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No.       .
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date       .
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other:       .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carrol et al. (6,082,969).

Carrol discloses a mixed flow fan (Figs. 1-4) comprising a fan wheel with a central hub 3 having a flat surface on one side and a hollow space on the other side (Fig. 1), several blades 7 attached to the outer rim of the hub in equal distances, with the surfaces of the blades being bend, the part connecting the blades to the hub also bend (Fig. 3), therefore forming cambered channels in the gaps between the blades, which are arranged in equal distances, characterized in that, the outer rim of the hub formed by beveled surface (Fig. 1), the flat surface of the hub as the air inlet side and the hollow space of the hub as the outlet side, wherein the beveled surface is formed by a slope descending from the side of the hub on which the hollow space is to the side of the hub which consist of the flat surface thereby the diameter of side of the hollow space to be larger than the diameter of side of the flat surface.

However, Carrol does not disclose the area ratio of the mix flow fan for the air inlet and the air outlet to be in a relation of 1.9-2.3 as claimed.

Since the applicant has not disclosed that having the area ratio of the mix flow fan for the air inlet and the air outlet to be in a relation of 1.9-2.3 solves any stated problem or is for any

particular purpose above the fact that a mixed flow fan generally has a conical hub with the area of the air outlet side larger than that of the air inlet side, and it appears that the mixed flow fan of Carroll would perform equally well with the range of ratios as defined claimed by applicant, it would have been an obvious matter of design choice to modify the fan of Carroll by utilizing the specific ratios as claimed.

***Prior Art***

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure and consists of 1 patent.

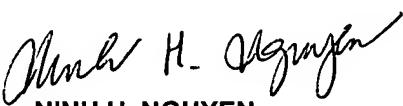
Papst et al. (4,618,315) is cited to show a mixed flow fan.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ninh Nguyen whose telephone number is (571) 272-4823. The examiner can be normally reached on Monday-Friday from 7:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (571) 272-4820. The fax number for this group is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, please go to <http://pair-direct.uspto.gov> or contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).



**NINH H. NGUYEN**  
**PRIMARY EXAMINER**

Nhn  
January 12, 2005